**IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF NEW JERSEY**

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| JUAN DUARTE and BETSY DUARTE, on behalf of Themselves and all others Similarly Situated,<br><br>Plaintiffs,<br>vs.<br><br>UNITED STATES METALS REFINING COMPANY; FREEPORT MINERALS CORPORATION; FREEPORT McMORAN, INC. and AMAX REALTY DEVELOPMENT, INC.,<br><br>Defendants. | Civil Action No. 2:17-cv-01624-EP-MAH<br><br>Honorable Evelyn Padin<br>Honorable Michael A. Hammer<br><br>Motion Day: August 15, 2022<br><br>**Defendants' Memorandum in Support of their Motion to Exclude the Opinions of Plaintiffs' Experts (Second Combined Motion)**<br><br>**Oral Argument Requested** |

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**DEFENDANTS' MEMORANDUM IN SUPPORT OF THEIR MOTION TO EXCLUDE THE OPINIONS OF PLAINTIFFS' EXPERTS (SECOND COMBINED MOTION)**

Defendants respectfully file this second combined motion to exclude the opinions of Plaintiffs' experts, and would show the Court as follows:

## I. INTRODUCTION

Plaintiffs' evidence in support of class certification is a straw house built on the sand of unreliable expert testimony. Every primary expert opinion alleged to support Plaintiffs' motion for class certification is flawed when measured against Federal Rule of Evidence (FRE) 702.

Multiple Plaintiffs' experts (George Flowers, Paul Rosenfeld, and David Sullivan) share the opinion that lead and arsenic emitted by the former United States Metals Refining Company's (USMR) smelter was deposited on properties throughout the proposed class area (PCA), and that these emissions are the primary source of these metals on PCA properties today. They also share disqualifying flaws. All three claim that sources other than the smelter are negligible, but offer no reliable scientific analysis to confirm that claim. And none of the three point to reliable scientific analysis that shows the presence of metals from smelter emissions across all PCA properties. Flowers (Plaintiffs' primary source identification expert) did not perform any reliable scientific analysis showing either that soil concentrations were linked to smelter emissions or that soil concentrations were not caused by other sources, such as historic fill or lead-based paint. Rosenfeld and Sullivan fare no better. Rosenfeld just parrots Flowers with no original analysis of his own. Sullivan is a meteorologist opining about the influence of historic fill on soil concentrations, a subject matter about which he is unqualified. Predictably, given his lack of qualifications, Sullivan's opinions mischaracterize USMR's microscopy work and are unreliable.

Plaintiffs' newest expert, Andrew Anthony "Tony" Havics—engaged to rebut USMR's microscopy evidence—does not actually opine that USMR misidentified materials as part of this

work. Instead, he focuses his criticisms on the sample selections. But these criticisms miss the mark because Havics misconstrues both the underlying sampling design for this investigation as well as the full scope of the actual samples and microscopy methods used.

Joel Blum, along with Flowers and Sullivan in their respective rebuttal reports, attempt to bootstrap their opinions with references to other smelters—which they admit have different products, feedstocks, operational characteristics, periods of operation, emissions rates, etc.—that purportedly had detectable impacts at vast distances. But estimation of the USMR smelter's impacts by unsupported analogy is inherently unreliable.

Finally, Jeffrey Zabel suggests that, in theory, he *could* use a hedonic regression analysis to create a universal average diminution in property value allegedly associated with the smelter. Yet Zabel's opinion is untethered to the facts. He has not built his hypothetical model and, as a result, it is completely untested (and incapable of being tested). Zabel's speculation about the reliability of his future work does not meet the admissibility requirements of FRE 702.

For the reasons set forth below, the opinions and testimony of Flowers, Rosenfeld, Sullivan, Havics, Blum, and Zabel should be excluded.

## II. FACTUAL BACKGROUND

This is a putative class action asserting property damage from a copper smelter that USMR operated in Carteret, New Jersey from 1906 to 1986. Plaintiffs allege that air emissions from the smelter landed and remain on their properties, causing property damages.

USMR's ongoing off-site investigation under the oversight of the New Jersey Department of Environmental Protection (NJDEP) resulted in the designation of an Area of Concern (AOC) with approximately 300 properties in close proximity to the smelter. *See* Ex. Q at 10.[1] Soil

[1] Page number cites are to the CM/ECF(pdf) page number (not page numbers on the document).

sampling demonstrates that any off-site impacts from the smelter that are distinguishable from background levels or other anthropogenic sources end within the AOC and do not extend to the much larger PCA. *See* Ex. U at 49–52. Sampling outside of the AOC has been primarily concentrated on three "transects" extending radially away from the smelter into Carteret. *See* Ex. SS. This sampling and other physical evidence shows that there are numerous other significant contributors to lead, arsenic, and copper in the PCA other than the smelter.[2]

Moreover, the ground distribution of metals is inconsistent with an aerial deposition source—Plaintiffs' dispersion theory. Ex. F at 99:7–100:25; Ex. U at 38–45. Key characteristics of aerial deposition are (1) the contaminants are at their highest concentration at the surface where the metals settle, and (2) concentrations decrease exponentially with distance from the source. Ex. U at 38, 49. In this case, the wide variability in soil sample results, the noticeable lack of a uniform exponential decline in concentrations with increasing distance from the smelter, and the highest concentrations located at lower depths are all inconsistent with aerial deposition, and accordingly also inconsistent with Plaintiffs' experts' opinions. Ex. Z at 44–47; Ex. U at 38–54.

## III. LEGAL STANDARD

The trial court acts as a "gatekeeper" and is responsible for ensuring that the standards of admissibility are satisfied.[3] Before admitting expert testimony, the court must determine that: (1)

[2] Excavations, soil borings, and microscopy all demonstrate the extensive use of fill materials containing lead, arsenic, and copper. Ex. U at 95–102; Ex. W at 33–36; Ex. Q at 14–16. Environmental studies of sites located in the PCA, independent of this litigation, identified contaminated historic fill containing copper, lead, and arsenic as part of NJDEP supervised investigations. Exs. KK, MM, NN. Microscopy has identified lead-based paint in soil samples, and the age of housing (a surrogate for lead-based paint impacts) has the strongest correlation with lead soil levels. Ex. U at 55–81; Ex. W at 42–43; Ex. X at 4, 6, 8–13, 16, 18. Historic uses of pesticides, treated wood, and other localized sources also contributed to the presence of lead, arsenic, and copper. Ex. U at 20–21, 81–84, 103–08; Ex. V at 2–5; Ex. T at 10–33. Arsenic-containing ash and cinders are ubiquitous from the use of coal as fuel. Ex. U at 97; Ex. T at 35-38.

[3] *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592, 597 (1993) (citing Fed. R. Evid. 702).

the expert is qualified to testify regarding the issue; (2) the expert's testimony is reliable; and (3) the testimony fits the facts and needs of the case.[4] The proponent of the expert's testimony bears the burden of establishing the admissibility of that testimony.[5]

"[A]n expert opinion must be based on reliable methodology and must reliably flow from that methodology and the facts at issue."[6] In other words, the expert must have both employed reliable methods and techniques, and have reliably *applied* those methods and techniques to the facts of the case.[7] To determine the reliability of an expert's testimony, courts examine factors including whether the expert has adequately accounted for alternative explanations and the qualifications of the expert witness testifying.[8] "Trained experts commonly extrapolate from existing data. But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert."[9] Finally, the same admissibility standards apply at the class certification motions stage as at trial. "Expert testimony that is insufficiently reliable to satisfy the *Daubert* standard cannot 'prove' that the Rule 23(a) prerequisites have been met 'in fact,' nor can it establish 'through evidentiary proof' that Rule 23(b) is satisfied."[10]

## IV. ARGUMENT AND AUTHORITIES

### A. Plaintiffs' Experts George Flowers, David Sullivan, and Paul Rosenfeld's Opinion that the USMR Smelter is the Primary Source of Soil Contamination within the Proposed Class is Unreliable.

Plaintiffs' primary expert on whether the contaminants at issue came from the smelter or

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[4] *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 741-45 (3d Cir. 1994)("*Paoli II*").
[5] *Oddi v. Ford Motor Co.*, 234 F.3d 136, 144 (3d Cir. 2000) (citing *Daubert*, 509 U.S. at 593 n.10).
[6] *Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 152 (3d Cir. 1999).
[7] *See In re Zoloft (Sertraline Hydrochloride) Prods. Liab. Litig.*, 858 F.3d 787 (3d Cir. 2017).
[8] *Magistrini v. One Hour Martinizing Dry Cleaning*, 180 F. Supp. 2d 584, 594–95 (D.N.J. 2002); *Paoli II*, 35 F.3d at 742 n.8; *see also General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997).
[9] *Id.*
[10] *In re Blood Reagents Antitrust Litig.*, 783 F.3d 183, 187 (3d Cir. 2015).

some other source is Dr. George Flowers, a geochemist and environmental engineer. Two other Plaintiffs' experts (Sullivan and Rosenfeld) parrot Flowers' opinions. All of this testimony is unreliable. The district court's decision in *Lee-Bolton v. Koppers, Inc.*, 319 F.R.D. 346 (N.D. Fla. 2017), another putative environmental tort class action where Flowers provided similar "source identification" opinions, is illustrative. Like here, Flowers opined that the defendant's facility was the major source of contaminants impacting area homes after alleging a geographic pattern of alleged contamination caused by air emissions from the facility. *Id.* at 362. The court, however, excluded Flowers' source identification opinions because they were unreliable. *Id.* at 351–52.

The *Lee-Bolton* district court identified two fundamental errors in Flowers' analysis that apply equally here. First, the *Lee-Bolton* court found that Flowers failed to adequately evaluate alternate sources of dioxin, the contaminant at issue, other than defendant's facility. *Id.* at 373–74. Flowers, and other Plaintiffs' experts, make this same mistake again by failing to address historic fill, lead-based paint, agricultural pesticide use, and other lead and arsenic sources here. Second, the *Lee-Bolton* court concluded that Flowers' opinion did not isolate the impacts of the industrial defendant's emissions as distinguished from other sources and natural background. *Id.* at 373. Again, Flowers, and other Plaintiffs' experts, make the same mistake here and fail to differentiate between contaminants from the USMR facility as compared to other alternate sources.

**1. Flowers' Source Identification Opinions are Unreliable**

**a. Flowers did not conduct a reliable analysis of alternate sources.**

"A necessary ingredient [of opinions on causation] is the exclusion of alternative causes."[11] Accordingly, "[i]n deciding whether an expert employed a reliable method, the district court [may]

[11] *Michaels v. Avitech, Inc.*, 202 F.3d 746, 753 (5th Cir. 2000); *see also* Fed. R. Evid. 702 advisory committee's note to 2000 amendment at ¶4(3).

consider whether the expert has adequately accounted for obvious alternative explanations."[12] The failure to assess alternate potential sources of environmental contaminants has been considered fatal to the admissibility of expert testimony in several environmental tort cases.[13]

Flowers recognizes the importance of alternate sources, stating in his report "[t]here is no doubt that the Defense will proffer a myriad of alternate sources for soil contamination to minimize the role played by the smelter in creating the problem." Ex. P at 28. Flowers even accepts that "[t]he company is correct that other sources *may* have contributed to soil loadings." *Id.* But Flowers did not do a reliable scientific evaluation of the obvious alternate sources of contaminants, which is fatal to his overarching opinion that "the USMR complex is the major source of soil contamination in the proposed Class Area." *Id.* at 31. Faced with a similar situation, the district court in *Cooper* explained it was the expert's burden to "***explain why certain obvious alternative explanations do not undermine his conclusion***" as to the source of the contamination. *Cooper*, 2019 WL 545187, at *22 (emphasis added). That was also Flowers' unmet burden here.

The two obvious examples of Flowers' failure to adequately address alternate sources of contaminants are (1) contaminated historic fill and (2) lead-based paint—both of which are ubiquitous in the PCA. Flowers testified that the impacts of historic fill are "unknown"—inadvertently acknowledging the shortcomings of his alternative source analysis. Ex. I at 61:23–62:8. Flowers stated "[f]ill is definitely found in Carteret" (Ex. CC at 39), and agreed that the use of "historic fill placed in and around Carteret" has the potential to "create localized metal

[12] *Brown v. Burlington N. Santa Fe Ry. Co.*, 765 F.3d 765, 773 (7th Cir. 2014) (internal quotation marks omitted); *accord Packgen v. Berry Plastics Corp.*, 847 F.3d 80, 87 (1st Cir. 2017); *Redd v. DePuy Orthopaedics, Inc.*, 700 F. App'x 551, 554 (8th Cir. 2017).

[13] *See, e.g.*, *Cooper v. Meritor, Inc.*, No. 16-cv-52, 2019 WL 545187, *19–22 (N.D. Miss. Feb. 11, 2019); *Lee-Bolton*, 319 F.R.D. at 373-74; *Innis Arden Golf Club v. Pitney Bowes, Inc.*, 629 F. Supp. 2d 175, 189 (D. Conn. 2009); *Baker v. Chevron USA, Inc.*, 2009 WL 3698419, *5 (S.D. Ohio Nov. 4, 2009).

anomalies." Ex. P at 30. Flowers agreed that historic fill is a potential source of lead and arsenic (Ex. I at 25:8–17), and that the large amount of "scatter" obscuring spatial trends in the soil data is consistent with the use of contaminated historic fill. *Id.* at 152:13–154:2. But Flowers actively avoided any meaningful assessment of the actual impact of historic fill on soil contamination.

Flowers did not look at the boring logs from the sample data even though he acknowledges that these logs contain information regarding the presence of non-native materials that are typically associated with fill. Ex. F at 231:9–18. He did not consider field notes by Plaintiffs' own consultant that stated there was fill in the sample. *Id.* 261:12–264:9. Flowers did not take advantage of an opportunity to observe any of the site excavations, where there was obvious, visible evidence of massive fill layers. *Id.* at 244:21–246:1; *see* Ex. V at 16, 19 (photographs of fill).

Flowers understands that the highest lead and arsenic concentrations are typically at depths below the surface sample layer including at depths of more than a foot below the surface.[14] This finding is consistent with fill, but is inconsistent with air deposition of smelter particulates on the surface. Ex. F at 113:6–16, 116:4–18; Ex. U at 38.[15]

In connection with his rebuttal report, Flowers ignored USMR's evidence of the significant impact of historic fill based upon the observations of its remediation manager in the AOC, and related reports to the NJDEP documenting historic fill in the AOC. Ex. Q at 14–15; Ex. I at 82:2–84:24, 88:10–89:19; Exs. OO, PP. Flowers failed to consider publicly available reports from the NJDEP regarding third-party investigations that documented the presence of historic fill

[14] *See* Ex. P at 53 (Fig. 14), 56 (Fig. 19) (showing elevated concentrations of arsenic and lead at depth); *Id.* at 19 ("It can be seen in Fig. 10 that copper enrichment and exceedances occur at all depths sampled as deep as 90 inches measured depth below the ground surface.").

[15] When asked why he believes that the depth profile of the sample results is consistent with contaminant air deposition, Flowers speculated that homeowners dig up and move soil around their yards. Ex. F at 122:8–123:25. Speculation untethered to any property-specific facts is not reliable.

contaminated with copper, arsenic and lead within the PCA. Ex. I at 27:10–28:3, 100:23–103:25, 105:23–106:22, 110:2–10, 113:9–14, 114:17–115:6, 116:14–117:12, 120:6–23; Exs. KK, MM, NN. These three third-party sites are all located in close proximity to the sampling transects, and provide independent, non-litigation evidence of site specific arsenic, lead and copper impacts from historic fill within the PCA. Ex. I at 126:15–127:7; Ex. QQ. The LSRPs[16] for these third-party sites certified under oath that the site-specific contamination was caused by historic fill, which by NJDEP regulatory definition cannot include smelter wastes. Ex. I at 108:12–109:20, 115:17–23, 123:14–19; *see also* N.J.A.C. 7:26E-1.8 (defining "historic fill material" to exclude metal ore processing wastes).

Flowers did not do any analysis of the source of the metals on any specific property in the PCA. *Id.* at 8:6–21. Flowers acknowledges that site specific investigations can develop key evidence of contamination due to historic fill, stating "a geologist could do it." *Id.* at 79:24–81:21. But Flowers did not do that necessary work as part of his source identification opinion.

Flowers also concludes that influences of lead-based paint on soil lead concentrations were significant enough to obscure the expected spatial distribution of soil concentrations from air emissions originating at the smelter.[17] Yet, despite his recognition of the impact of lead-based paint on soil concentrations, Flowers made no effort to quantify lead-based paint's impact. His discounting of lead-based paint's influence on soil concentrations is pure *ipse dixit*.

U.S. EPA has explained that "the strongest statistical predictor of soil lead [from lead-

[16] The LSRP or Licensed Site Remediation Professional is the day-to-day manager of an NJDEP environmental site investigation and remediation project who acts on behalf of the agency.

[17] *See e.g.*, Ex. CC at 33 ("Considerable spatial variation in point-to-point soil loadings is found . . . [due in part to] confounding sources of metals (e.g., lead-based paint), [where] the resulting noise confounds or masks any geostatistically discernable pattern attributable to air deposition of particulates from the smelter.").

based paint] was found to be the building age" and has reported that homes built before 1940 and 1950 tend to have "significantly greater . . . lead in soil" than those built after 1960—a well-known fact that Flowers completely failed to consider. Ex. HH at 11. Flowers agrees that Carteret is a community where over 55% of the housing was built prior to 1960. Ex. F at 216:3–24. Yet Flowers did not test the sensitivity of any of his conclusions against confounding from lead-based paint by using housing age as a metric. *Id.* at 152:15–18. Defendants' experts explicitly show that Carteret soil concentrations are correlated with housing age (an accepted surrogate for lead based paint impacts). Ex. U at 55–81. Given the opportunity to test this correlation as part of his rebuttal report, Flowers failed to address it. Ex. I at 200:22–201:24. Similarly, Flowers does not refute USMR's lead based paint evidence with ratio tests, principal component analysis, or microscopy. Ex. F at 39:18–20, 41:12–42:19, 146:3–147:3, 192:24–193:19.[18]

Arsenic, lead, and copper have been used in building products, pesticides, and other common products for centuries, and are ubiquitous soil constituents in urban soil. An expert must "explain why certain obvious alternative explanations do not undermine his conclusion."[19] Flowers' failure to do so makes his opinion unreliable under FRE 702.

**b. Flowers also fails to provide reliable scientific evidence of smelter contributions to the soil metal concentrations.**

The other fatal flaw identified by the court in *Lee-Bolton* was that Flowers used an analytical technique that was *incapable* of distinguishing the defendants' impacts from those of alternate sources.[20] Flowers makes the same mistake here.

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[18] Defendants' experts utilized all three. Ex. S at 10–13; Ex. W at 42–43.
[19] *Cooper*, 2019 WL 545187, at *22.
[20] *Lee-Bolton*, 319 F.R.D. at 361–62, 373. Indeed, this error also means Flowers fails another prong of FRE 702: "fit." *Paoli II*, 35 F.3d at 742–43 (explaining the "fit" requirement). Even if Flowers' scientific knowledge can *describe* soil concentrations, "it is not scientific knowledge *for purposes of the case*" because he does not assist the trier of fact to determine their *source*. *Id.*

Flowers described the primary physical properties of particulates that would have originated from the smelter in his report (*e.g.*, the expected size of the particles, general chemical composition, and the particle morphology or shape).[21] He has done investigations of airborne particulates from industrial sources at other sites, and used SEM/EDS[22] technology using these same characteristics (size, chemical composition, and morphology) to identify particles originating from a coal-fired power plant. Ex. F at 37:16–38:15. In that previous coal combustion case, relying on the SEM/EDS analysis, Flowers concluded:

> Because alumino-silicate and ferrous spherules in the environment have been directly linked to coal combustion . . . the [SEM/EDS] cross section demonstrates conclusively that coal combustion products are found in plaintiffs' wipe samples[.]

Ex. LL at 5. SEM/EDS is the same technology Defendants' expert Steve Mattingly used to look for (and confirm the absence of) smelter particles. Ex. W at 20. SEM/EDS provides the specificity and reliability missing from Flowers' analyses here. Ex. X at 14 (SEM/EDS is "capable of identifying [smelter] particulates if they are present"). Nevertheless, Flowers did not use this commonly accepted technique to identify particles that have the signature characteristics of particulate emissions from a copper smelter. Notwithstanding Plaintiffs' criticisms of Mattingly's sample selection (addressed below), Plaintiffs' experts do not dispute that microscopy is capable of identifying particles that are characteristic of smelter air emissions. *See e.g.*, Ex. J at 169:24–170:5. Flowers' original and rebuttal reports are devoid of any evidence of characteristic smelter air emission particles existing on a single PCA property.

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[21] Ex. P at 12 ("Most of the particulates (80%) were less than 53 um (1 um = $10^{-6}$ m) in size with most falling between 5 and 50 um (silt-sized) . . . Compositionally, it contained heavy metals as expected, copper (144,000 ppm), lead (1,114 ppm), and zinc (2,169 ppm) . . . Morphologically, the material formed from condensation of flue gases . . . resembling spherulitic particles.").

[22] SEM/EDS is a forensic chemistry methodology that utilizes a scanning electron microscope combined with energy dispersive x-ray spectroscopy to identify the size, chemical composition, and morphology of very small particles. *See* Ex. W. at 20.

Flowers' reports also do not include a reliable explanation for how the actual soil sampling results are consistent with smelter air emissions. Flowers acknowledges in his report that there is "considerable variation . . . observed in the [soil] data." Ex. P at 20. He also notes "hot spots" unrelated to distance from the smelter. *Id.* at 20–21. As part of his rebuttal report, Flowers attempted a trend analysis that purports to show an exponential decreasing trend in copper concentrations characteristic of air emissions. Ex. CC at 30 (Fig. 13). But Flowers acknowledges the statistical significance of this trend is weak. Ex. I at 152:17–153:6. More importantly, this purported trend looks absolutely nothing like the trend that Plaintiffs' other expert Blum described as characteristic of an air dispersion impact. Ex. GG; Ex. I at 149:14–152:7. Rather than scientific analysis, Flowers' opinion rests on colorful rhetoric that the "[s]melter [] was raining material." Ex. F at 259:4–19. This decidedly non-technical imagery does not suffice to demonstrate a reasonable degree of scientific certainty. In *Lee-Bolton*, "Dr. Flowers admitted that he saw variability in the data . . . suggesting that other sources could be impacting the data."[23] There, as here, he chose not to evaluate possible explanations for that variability in a reliable scientific way.

Finally, one of the key assertions in Flowers' rebuttal of the Defendants' source identification evidence is based on Flowers' repeated insistence that the USMR smelter air emissions are the only contaminant source containing all three metals (copper, lead and arsenic). *See e.g.*, Ex. CC at 4, 6. In particular, Flowers asserts "the distribution of copper loadings, the primary smelter signal, in the PCA remains unexplained by [USMR's] alternate source model." *Id.* at 40. A necessary corollary to this argument is Flowers' assertion that all three metals (and copper specifically) are not common contaminants in historic fill.[24]

[23] *Lee-Bolton*, 319 F.R.D. at 373.

[24] *Id.* at 35 ("copper would not be highly enriched in generic fill; and . . . simultaneous enrichment in copper and lead is difficult to explain in generic fill"); 43 ("no alternate source suggested thus

But Flowers' **uninformed** assertion that copper is not a common contaminant in historic fill is incorrect. Flowers asks the Court to trust his professional judgment. Ex. I at 23:13–25:20. But he did not research scientific literature or relevant regulatory publications. *Id.* at 26:25–27:9. He did not investigate available NJDEP site investigation data bases. *Id.* at 27:10–28:3. A US EPA study of New York City sites found that all three metals (arsenic, lead, and copper) were commonly found in historic fill. Ex. JJ at 23 (Table 3). The LSRP for the USMR site has approved historic fill designations elevated in all three metals within the AOC. Ex. OO, PP. Finally, three third party site investigations within the PCA overseen by NJDEP and conducted independently from this litigation identified historic fill that was elevated in these metals. Exs. KK, MM, NN. Flowers' opinion regarding the copper content of historic fill is not only unreliable. It is demonstrably false.

Flowers' source identification opinions are unreliable and inadmissible under FRE 702.

### 2. Sullivan's Own Air Model Disproves Plaintiffs' Primary Contaminant Source Opinions

Purported expert evidence of class-wide environmental impacts from air emission sources is typically based on air modeling.[25] Plaintiffs' air modeler is David Sullivan. He constructed a purported air model of USMR's historic emissions. But Sullivan's model does not show smelter impacts "blanketing" Carteret as alleged by Flowers and others. Ex. R at 47; Ex. Z at 44–47. Instead, Sullivan's Figures 15–17 show that his predicted soil concentrations for lead outside the AOC are less than half the concentration that would require cleanup under NJDEP rules (400 ppm) under *every scenario he considered*. Ex. R at 47–51.

In their rebuttal expert reports, Plaintiffs have predictably tried to distance themselves from

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far contains copper and lead in concentrations that can explain the copper-lead and copper-arsenic correlations . . . and overall copper enrichment"), 47, 49.

[25] *See e.g.*, *Sullivan v. St. Gobain Performance Plastics Corp.*, 2019 WL 8272995, *2 (D. Vt. Aug. 23, 2019) (testimony of Gary Yoder); *Freeman v. Grain Processing Corp.*, 895 N.W.2d 105, 110–11 (testimony of Paul Rosenfeld).

Sullivan's air model. *See e.g.*, Ex. CC at 14 (characterizing the model as "qualitative"). But they cannot hide from the fact that Sullivan's first report from May 4, 2019 attested to the reasonableness of the magnitude of predicted soil impacts. Ex. L at 12 ¶11 ("The modeling of the USMR-generated stack and fugitive facility related emission rates . . **reasonably replicates the general trends and magnitudes of measured soil contamination**. . ."). After issuance of this initial report, Sullivan discovered a huge math error that overstated the USMR emission rates. *See* Ex. E at 11:9–12:19. He reran the model with corrected emission rates and found that the magnitude of the predicted offsite impacts from the USMR facility were negligible beyond the immediate vicinity of the smelter site. Ex. R at 47–51 (Figs. 15–17). Only *after* these errors were discovered did Sullivan and Plaintiffs' other experts conclude that the model no longer "reasonably replicates the . . . magnitude of soil contamination." *See, e.g.*, Ex. G at 263:12–25. This kind of result-oriented expert testimony is inherently unreliable.

Plaintiffs devote an enormous amount of energy in their rebuttal expert reports arguing the implausibility of USMR's position that smelter air emissions are no longer discernable at the outer boundary of the AOC. *See e.g.*, Ex. CC at 4, 7, 31, 43. But Plaintiffs' own air model validates USMR's position (and is entirely inconsistent with Plaintiffs' theory of this case).

**3. Sullivan's Attempts to Address Historic Fill are Unreliable.**

In his rebuttal report, Sullivan purports to address USMR's expert evidence of soil contamination caused by historic fill. Ex. DD at 4–34. But "to qualify as an expert . . . a witness must possess sufficient qualifications in the form of knowledge, skills and training."[26] If an expert seeks to testify outside his area of expertise, his testimony will be inadmissible.[27] Sullivan is a

[26] *Meadows v. Anchor Longwall & Rebuild, Inc.*, 306 F. App'x 781, 788 (3d Cir. 2009); *see also Calhoun v. Yamaha Motor Corp.*, 350 F.3d 316, 322 (3d Cir. 2003).
[27] *Id.*

meteorologist with experience in air quality related matters and lacks qualifications or experience in the assessment of impacts of historic fill on soil metals concentrations. Ex. E at 24:22–25:16. Identification and assessment of historic fill contamination is the work of a geochemist or environmental engineer, not a meteorologist and air modeler. Sullivan is not a geochemist, and is not qualified to address soil contamination caused by historic fill. Ex. K at 24:19–20.

Sullivan's opinions on historic fill are also unreliable. In his analysis of USMR's microscopy results identifying historic fill, Sullivan misrepresents both the methodology and the results of that investigation. USMR's microscopy expert, Steve Mattingly, explained that his investigation involved evaluating samples collected predominately from the transects using a range of different microscopes with different capabilities. Ex. W at 20; Ex. H at 26:1–29:5. The objectives of his work included (1) looking for particles indicative of smelter air emissions (of which he found none), and (2) looking for other non-native particles such as historic fill or lead-based paint that have been associated with elevated soil metal concentrations (of which there were many). Ex. W at 9, 20–22. Mattingly evaluated 380 samples from the transects with stereomicroscopy and identified fill in all of them. *See* Ex. X at 8–15. These samples included multiple samples from almost every transect property encompassing a cross section of housing ages, sample depths, and arsenic and lead concentrations. *See* Ex. W at 12–19 (Tables 1, 2).

Where fill materials are present and the soil concentrations exceed NJDEP cleanup standards, NJDEP technical guidance considers the area contaminated by historic fill.[28] Applying

[28] NJDEP regulations define historic fill material as "non-indigenous material, deposited to raise the topographic elevation of the site, . . . which includes, without limitation, construction debris, dredge spoils, incinerator residue, demolition debris, fly ash, or non-hazardous solid waste. Historic fill material does not include any material which is substantially . . . waste from processing of metal or mineral ores, residues, slag or tailings. . . " N.J.A.C. 7:26E-1.8. NJDEP considers the historic fill to be contaminated if there are visual indications of the materials described in the

this NJDEP standard to the transect sample metal concentrations evaluated by Mattingly, Mattingly identified approximately 339 transect samples containing contaminated historic fill.[29] In some cases, Mattingly conducted additional analyses with polarized light microscopy, scanning electron microscopy with energy dispersive spectrometry (SEM/EDS), and electron probe microanalysis to identify the specific fill materials in the samples associated with elevated lead and arsenic concentrations. Ex. W at 20. Nevertheless, a key finding in Mattingly's work was that fill was ubiquitous and it was collocated with elevated metal concentrations. Ex. X at 15.

Sullivan twists Mattingly's methodology and results beyond recognition. He falsely claims that Mattingly did not find historic fill in dozens of samples by noting that the boring logs did not identify fill. Ex. DD at 15. But Mattingly did not rely on the boring logs; he used microscopy. Ex. X at 14–15. Sullivan then erroneously suggests that the only samples with elevated metal concentrations due to historic fill are those sent for confirmatory elemental analysis via SEM/EDS. Ex. DD at 15. But Sullivan ignores that stereomicroscopy identified fill (but not smelter air emissions) in virtually every sample. Moreover, the vast majority of those exceeded NJDEP cleanup levels, and accordingly represent contaminated historic fill. *See supra* fn. 29.

To illustrate this point, it is helpful to focus on the four transect properties that Sullivan evaluated. Ex. DD at 18–21 (Figs. 1.3–1.6). For these four properties, 10 surface soil interval samples were collected at each property for a total of 40 samples. *Id.* at 16. Sullivan falsely states

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definition above and the sample concentrations exceed NJDEP residential soil remediation standards. Ex. RR at 7–9.

[29] The relevant NJDEP residential cleanup standards are: arsenic 19 ppm, lead 400 ppm, and copper 3100 ppm. Ex. PP at 8. If one isolates the samples that both exceed the cleanup standards and were evaluated by Mattingly with microscopy (Ex. W at 12–18 (Table 1)) then compares that list to the samples where Mattingly identified fill (Ex. X at 8–13 (Table 3)), 339 samples meet the NJDEP definition of historic fill. *See also, id.* at 15 ("urban fill is associated with elevated concentrations of heavy metals"); Ex. H at 175:5–8; 196:6–15 (same).

that only 2 of those 40 contain fill—substituting his flawed analysis of the boring logs for Mattingly's stereomicroscopy analysis. *Id.* In fact, Mattingly looked at 15 of the 40 samples with stereomicroscopy and found fill components in every single one.[30] Ex. EE; *see also* Ex. TT (contrasting historic fill sample testing by Sullivan and Mattingly). Evaluation of the lead and arsenic concentrations for these 15 samples shows that 14 exceeded the NJDEP soil remediation standard and represent contaminated historic fill. *See id*. So, contrary to Sullivan's opinion that "the source of contamination of these properties is not . . . fill materials" (Ex. DD at 16), every one of these properties was impacted by contaminated historic fill based upon multiple individual samples.[31] Moreover, Mattingly found no indication of any smelter particulates. Ex. X at 14.

Sullivan is not qualified to assess the impact of historic fill on soil concentrations and his opinions in that regard are unreliable and should be excluded under FRE 702.

**4. Rosenfeld's Source Identification Opinions Just Parrot Unreliable Work by Flowers and Sullivan.**

Rosenfeld's opinion that USMR was the "primary source" of lead, arsenic, and copper within the PCA lacks any credible or verifiable support.[32] Rosenfeld testified that he had "considered" various alternative sources, but failed to perform *any* quantitative analyses whatsoever to support his opinion.[33] Indeed, he acknowledges that "additional sources of the

[30] Plaintiffs microscopy expert (Havics) agreed that stereomicroscopy is generally capable of identifying the elements of fill described in Mattingly's report. Ex. J at 117:8–118:1.

[31] Mattingly conducted additional SEM/EDS on only one of the 15 samples, and further identified that the elevated lead concentration in that sample was due to lead based paint. Ex. EE.

[32] The experts of both parties agree that there is an exponential decreasing trend of metal concentrations in the immediate vicinity of the smelter that could be due in part to historic air emissions from the smelter (*e.g.*, the approximate 300 properties in the Area-of-Concern ("AOC") that is currently undergoing remediation as part of the NJDEP regulatory action). *See* Ex. S at 21. Nevertheless, even within the AOC, there is evidence of significant alternate sources of metals. *See supra* at 3–4.

[33] Ex. D at 90:15–92:2 (Rosenfeld did not calculate the amount of smelter materials entering the class area); 53:1–11 (Rosenfeld did not develop a smelter "signature" concentration profile); 168:17–169:10 (Rosenfeld thought about but did not complete a "correlation analysis").

[chemicals of concern] may exist in Carteret," (Ex. O at 26) and testified to that effect. Ex. D at 58:4–61:14. Still, Rosenfeld suggests that, based on his "general understanding of air modeling and soil chemistry," the Court should just trust his judgment that none of these sources have a material impact. Ex. D at 98:1–5. Moreover, Rosenfeld repeatedly declined to articulate a scientific foundation for his opinions and either (i) deferred substantive questions on the source of soil metals to Flowers' unreliable work (*id.* at 48:6–9, 57:17–58:3, 70:22–71:5, 168:17–169:10); or (ii) punted questions on distribution of contamination to Plaintiffs' "air" expert, David Sullivan. *Id.* at 56:2–22, 98:23–99:6, 102:1–13, 110:8–13. Rosenfeld also admitted that his posited other "lines of evidence" based on old photographs and violations provided no quantitative support for his opinion. *Id.* at 100:4–11, 101:1–15. Rosenfeld's opinions are not admissible under FRE 702.[34]

To sum up, Plaintiffs' experts failed to either exclude the impact of alternate sources or provide reliable class-wide evidence that the smelter is a common and substantial contaminant source across the PCA, so their opinions should be excluded under Rule 702.

### B. Tony Havics' Criticisms of USMR's Microscopy Evidence Grossly Mischaracterize this Work and are Unreliable.

Plaintiffs hired Tony Havics to rebut USMR's microscopy evidence developed primarily by Mattingly. Importantly, Havics admits that he cannot point to a single misidentification in Mattingly's microscopy evaluation of the soil samples. Ex. J at 169:24–171:2. The focus of Havics' criticism was instead on Mattingly's purported sample selection for his microscopy analysis. *See* Ex. BB at 7. Specifically, Havics claims that Mattingly's sample design should have "involve[d] some type of random selection," but did not. *Id.* Havics then goes on to claim that Mattingly's sample selection was biased such that it led to unreliable conclusions. *Id.* There are

[34] *See Joiner*, 522 U.S. at 146 (opinion connected to the evidence only by *ipse dixit* of the expert is inadmissible).

two independent problems with Havics' opinion. First, his characterization of the samples that Mattingly examined with microscopy is grossly incorrect. Second, Mattingly used a judgmental, rather than random, sampling design, which is well-accepted in environmental site investigations.

**1. Havics Misstates the Samples Mattingly Examined.**

Havics characterized Mattingly's sample selection as "he took the upper 5 percent, the lower 5 percent of data [referring to arsenic and lead soil concentrations], and then made conclusions about the 90 percent of the data." Ex. J at 62:11–13, 63:11–21; Ex. BB at 7. But that is just wrong. Mattingly evaluated over 400 samples across a broad distribution that roughly matched the distribution of all of the sample data above where the parties have generally placed the top of the background range. *See* Ex. FF at 3, 4. Havics admits he was wrong (Ex. J at 70:7–12), and admits that he made no effort to assess Mattingly's complete sample distribution. *Id.* at 65:3–66:18. Havics amended his opinion during his deposition to apply his 5 percent characterization to only the SEM/EDS testing, which is a subset of the samples Mattingly evaluated with microscopy. *Id*. at 70:15–16. But that is wrong too; as Havics' deposition testimony later in the day shows, a significant percentage of even SEM/EDS work was done on samples below the upper 5 percent. *Id.* at 132:16–136:25. Havics' shifting and inconsistent allegations of a biased sample distribution are an unreliable moving target that only demonstrate Havics' poor understanding of Mattingly's microscopy work.

**2. Havics' Focus on Random Sampling Misses the Mark; Mattingly Employed a Reliable Judgmental Sampling Design.**

The underlying premise of Havics' criticism of Mattingly's sampling design is that Mattingly did not randomly select his samples. Ex. BB at 7. But Havics acknowledged that judgmental sampling designs (where samples are not randomly selected) are frequently used in

environmental investigations.[35] In essence, Havics applies random sampling criteria to a judgmental sampling study—a classic "apples to oranges" comparison where Havics judged Mattingly's work with an inapplicable set of metrics.

As noted above, the general purpose of Mattingly's microscopy work was to evaluate soil samples for the presence or absence of smelter air emissions as well as other anthropogenic sources of metal contamination such as historic fill, lead based paint, and metal containing pesticides. Ex. W at 7, 9. For a significant majority of his study, Mattingly "targeted 300 samples exhibiting temporal, spatial, and compositional diversity." *Id.* at 11, 19 (Table 2), 23; Ex. J at 53:17–54:8. Mattingly's sample selection focused on housing age (related to lead based paint), sample depth (related to both historic fill and smelter air emissions), and arsenic and lead concentrations (related to the degree of contamination). Ex. W at 19 (Table 2). US EPA in its "Guidance on Choosing a Sampling Design for Environmental Data Collection" describes the features and applicability of judgmental sampling designs to environmental investigations. Ex. II at 29. Judgmental sampling is particularly appropriate where there is "reliable historical and physical knowledge about the feature or condition under investigation" and "[t]he objective of the investigation is to screen . . . for the presence or absence" of the material under study. *Id.*

Mattingly's microscopy work aligns with EPA's judgmental sampling criteria. Moreover, Mattingly fully described his sample selection design in his report. Ex. W at 10–19. Nevertheless, Havics did not evaluate Mattingly's work against the criteria applicable to a judgmental sampling

[35] For example, Havics acknowledged that he regularly uses judgmental sampling in mold investigations (Ex. J at 34:14–18), underground storage tank investigations (*Id.* at 35:25–36:11), and contaminated site investigations under ASTM Standard 1903 (*Id.* at 58:23–59:10). ASTM has concluded that the judgmental environmental sampling design used in Standard 1903 results in "sound, scientifically valid data concerning actual property conditions." *Id.* at 60:4–18. Havics also agreed that NJDEP's required sampling procedure to identify historic fill is based on judgmental sampling—not random sampling. *Id.* at 77:1–82:3.

design. Ex. J at 54:9–24, 89:5–14, 94:19–95:23. Instead, he focused on inapplicable random sampling criteria. Havics' opinions are not reliable and should be excluded under FRE 702.

### C. Plaintiffs' Experts Joel Blum, David Sullivan, and George Flowers' Opinions Derived From Comparisons to Other Smelters are Unreliable.

Blum's opinion, and portions of Sullivan's and Flowers' rebuttal opinions, boil down to the proposition that the USMR smelter must have contaminated a vast area surrounding the smelter because other smelting operations, regardless of material differences, have done the same. Ex. M at 4; Ex. DD at 5–6, 22; Ex. CC at 4–5, 8–14. But reliable expert opinions require more than simplistic and subjective comparison untethered to any factual demonstration that the comparison is reliable.[36]

As a threshold matter, Blum, Sullivan, and Flowers are unqualified to render their opinions. Sullivan has no expertise in smelter operations and is therefore unqualified to opine on whether smelters are similar or not (as explained below, they are not). Flowers is not an expert in the processes of atmospheric transport, despite claiming that the processes in Carteret are necessarily similar to those at other smelters (again, they are not). Finally, Blum falls short on both counts; he has expertise in neither smelter operations nor atmospheric transport.

Even if Blum, Sullivan, or Flowers were qualified, their opinions are unreliable because they ignore crucial differences among the smelters at issue. All three admit that certain factors, both operational and environmental in nature, affect a smelter's footprint. All three also admit that they did not consider most, if not all, of those factors. Their opinions should therefore be excluded.

#### 1. Blum, Sullivan, and Flowers are not qualified to render their opinions.

As noted above, if an expert seeks to testify outside his area of expertise, his testimony will

[36] *UGI Sunbury LLC v. A Perm. Easement for 1.7575 Acres*, 949 F.3d 825, 833–34 (3d Cir. 2020) ("Courts look for rigor, not mere haphazard, intuitive inquiry." (internal citation omitted)).

be inadmissible.[37] Blum, Sullivan, and Flowers are not qualified to render an opinion on smelter footprints, especially through a slipshod comparative analysis of other smelting operations. At the outset, and as will be explored more in the next section, all three experts concede that the operational and atmospheric characteristics of each smelter affect their respective footprints.[38]

Thus, Plaintiffs' three experts' lack of expertise in smelter operations, atmospheric modeling, or both renders their opinions inadmissible. Sullivan, a meteorologist and purported air modeling expert (Ex. E at 26:9–15; Ex. R at 11), concedes that he is not an expert in smelter operations. Ex. E at 30:6–20. Flowers, a geologist and geochemist (Ex. F at 29:22–30:2), admits that he is not an expert in air or wind dispersion modeling. *Id.* at 32:18–34:12. Blum, another geochemist (Ex. B at 19:18–24), professes a lack of expertise in both smelter operations and air modeling. *Id.* at 21:9–16, 27:11–18, 27:24–28:3. If an understanding of both smelter operations and atmospheric features is essential to fully characterize a smelter's footprint, as they all admit, their attempts to compare smelter to smelter and draw inferences about supposedly similar impacts is futile at best. Their outside-of-expertise speculation should be excluded as inadmissible.

**2. Blum, Sullivan, and Flowers' opinion that the USMR smelter's footprint is comparable to the footprint of other smelters is not reliable.**

Blum, Sullivan, and Flowers opine that the USMR smelter must have had soil impacts in the PCA based on their comparison of other smelting operations—a comparison done without accounting for the multitude of factors that make each smelting operation unique. No two smelters are alike and neither are their impacts. *See* Ex. I at 175:1–23. "[E]xperts often extrapolate from existing data," but courts cannot admit into evidence opinions that are "connected to existing data

[37] *Meadows v. Anchor Longwall & Rebuild, Inc.*, 306 F. App'x 781, 788 (3d Cir. 2009); *see also Calhoun v. Yamaha Motor Corp.*, 350 F.3d 316, 322 (3d Cir. 2003).
[38] Ex. K at 16:24–21:22, 31:24–32:24; Ex. I at 49:23–50:7, 175:1–23; Ex. CC at 5; Ex. B at 25:2–28:3, 99:23–101:9; *see also*, Ex. Z at 28–29 (discussing factors affecting atmospheric dispersion and soil deposition).

only by the *ipse dixit* of the expert."[39] Forcing a connection between different smelters with materially different characteristics—or with wholly unconsidered characteristics—is the exact type of unreliable and inadmissible *ipse dixit* testimony that should be excluded.[40]

As an initial matter, all three admit that there are a variety of factors that will determine a smelter's emission footprint.[41] The factors include a smelter's production level, characteristics of smelter feed, particle size of emissions, rate of processing, emission controls, stack height, meteorological and atmospheric conditions, and geographic features of a location. *Id.*

In spite of this recognition, their comparative "analysis" addressed few, if any, of these factors. Sullivan admits that the literature he reviewed either did not address his comparison of smelters' operational characteristics or, in fact, noted certain characteristics that distinguish them from the USMR smelter.[42] Flowers similarly admits that he made little or no effort to evaluate the above-listed factors (Ex. I at 49:23–52:16), and also recognizes that there are a host of key differences between his comparison smelters and the USMR smelter, including that only one of the comparison smelters he lists (i.e., Rushton) was primarily a copper smelter—which had unique features of its own. *Id.* at 32:11–37:23 (Meadowbrook Works smelter), 46:16–47:5 (Donora and La Oroya smelters), 47:25–49:16 (Rushton smelter).

Blum's opinion is even more unreliable, because his comparisons encompass or undergird the entirety of his opinion. Blum opines that the footprint of the USMR smelter can be determined by comparing the footprints of four other smelters. But of the above-listed factors, Blum concedes

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[39] *Joiner*, 522 U.S. at 146.
[40] *Id.*
[41] *Supra* fn. 37.
[42] Ex. K at 23:3–10 (review of smelter studies), 26:9–14 (Anaconda smelter), 27:18–23 (Anaconda smelter), 28:24–30:5 (Anaconda smelter), 36:24–37:19 (Omaha Lead Superfund Site); 40:15–41:17 (Flin Flon and Bor smelters), 43:17–44:10 (Tacoma smelter); 48:6–9 (Blackwell smelter); 49:8–52:24 (smelters reviewed during Mattingly's deposition, including the Horne smelter).

that he only considered stack height. Ex. B at 38:6–19, 100:20–101:7. In any case, he further concedes that he has little or no understanding of how the factors, including stack height, impact smelter footprints.[43] *Id.* at 25:23–28:3, 110:10–17.

Also like Sullivan and Flowers, Blum fails to account for the myriad of differences between the USMR smelter and his comparison smelters. For example, Blum concedes that three of the four smelters have "significant" differences from the USMR smelter, including (but not limited to) different smelter feeds, topography, and stack heights. *Id.* at 73:23–75:1 (Tacoma/Asarco smelter), 99:12–103:8 (Trail smelter), 110:8–17 (Glover smelter); Ex. M at 5. Even with the Horne smelter, Blum's primary comparison, Blum declined to consider substantial material differences, like wind field characteristics and particle size.[44] Ex. B at 48:22–54:15.

To cap it off, Blum is wrong about, or fails to consider, several baseline issues regarding the USMR smelter that further imperil his superficial comparisons. For example, he believes that the USMR smelter continually operated with a 425-foot stack. Ex. M at 8. But the USMR smelter operated as a primary smelter with a 400-foot stack for *only 12 years*, from 1948 to 1960,[45] and before that operated with stacks *less than half as tall*.[46] Ex. A at 102:10–103:13; Ex. Z at 20–22, 56–57. On these facts alone, the USMR smelter is vastly different from Blum's comparison smelters, which likely used their stacks for primary smelting for decades longer.[47] Moreover, Blum

[43] Sullivan, Plaintiffs' own air modeling expert, acknowledges that USMR's 400-foot stack was not a significant source of metal in the PCA. Ex. G at 310:4–311:8; Ex. R at 57.
[44] The differences between Blum's comparison smelters and the USMR smelter are described by Defendants' expert Ranjit Machado in his report. Ex. R at 55–59.
[45] For all operations, the 400-foot stack operated from 1948 to 1986. Ex. A at 104:5–24.
[46] Blum did not know the history of stack heights used at USMR. Ex. B at 118:21–119:25.
[47] Horne opened in 1927 and was still operating 92 years later (Ex. B at 48:22–49:7; Ex. Z at 56); Trail opened in 1896 and was still operating 123 years later (Ex. B at 97:1–11); Tacoma/Asarco opened in 1890 and operated for 96 years, with its 571-foot stack beginning operation in 1917 (*Id.* at 75:16–76:6; Ex. Z at 54). Blum had little to no knowledge of these key facts. (Ex. B at 51:22–53:3; *id.* at 100:13–19; *id.* at 103:1–3; *id.* at 76:9–14).

fails to consider the USMR smelter's switch in 1960 from primary smelting (where the feed is ore or ore concentrates) to exclusively secondary smelting (where the feed is metals for recycling), a key determinant of its footprint. Ex. Z at 22. Despite knowing that such a switch occurred (if not when it occurred), and that secondary smelting would lead to different levels in impurities (including lead and arsenic), Blum declined to consider this development in his comparative analysis. Ex. B at 121:5–122:18.

Blum's, Flowers' and Sullivan's opinions comparing USMR's alleged environmental impact from historic air emissions to other inapplicable smelters are unreliable under FRE 702.

**D. The Opinions of Plaintiffs' Expert Jeffrey Zabel are Unreliable.**

Plaintiffs seek to certify a class of residential property owners within the proposed class area, which encompasses portions of the Borough of Carteret and portions of Port Reading in New Jersey. Doc. 51 at ¶53. Plaintiffs' contention that they can prove damages on a class-wide basis rests on the purported expert report of economist Dr. Jeffrey E. Zabel, which offers just one hypothetical opinion: Zabel suggests that, in theory, he *could* use an hedonic regression analysis to create a universal average diminution in property value that the Court might apply to all properties in the proposed class. Ex. N at 10. Yet Zabel's opinion, untethered to facts and completely untested (and incapable of being tested), is inadmissible for four independent reasons.

**1. Zabel's opinion is not informed by any significant case-specific data collection, data analysis, model design or development, or other testable application of the hedonic method to the facts of the case.**

Plaintiffs retained Zabel, an economist, "to provide an opinion regarding the potential for environmental contamination in portions of Carteret and Port Reading, New Jersey, to negatively impact residential property values, and the existence and applicability of methods to assess such impacts on a class-wide basis." Ex. N at 3. Zabel does not, however, provide any actual analysis of the market value of properties in PCA. *Id.* Rather, Zabel's report merely hypothesizes that a

hedonic property value method, or regression analysis, *could* be used to develop "a statistical model of the impacts of the soil contamination to the class as a whole that can be applied individually to all affected properties (typically on a percentage basis)." *Id.* at 10. Moreover, Zabel's rebuttal report does nothing to cure this fundamental defect. *See* Ex. AA at 3 (he has not completed his "hedonic property value analysis").

Zabel outlines a series of generalized, hypothetical steps to the hedonic approach without reference or analysis to the realities of the PCA, and concludes these steps could be applied to the PCA. *See* Ex. N at 5–10; *see also*, Ex. AA at 4. He reaches this conclusion despite having done essentially no factual development or analysis to verify his method will fit the facts of this case:

- Zabel has not yet constructed his hedonic model. Ex. C at 56:21–57:1, 101:15–24;
- Zabel has not developed the residential data to run his model. *Id.* at 107:22–25, 108:1–109:1;
- Zabel has not done any quantitative appraisal or valuation analysis for the Duartes or for anyone else in the proposed class. *Id.* at 36:4–37:7, 38:15–18;
- Zabel does not know the location or fraction of the PCA where people received cleanup notice letters or participate in the regulatory program. *Id.* at 118:1–119:3;
- Zabel has no familiarity with the PCA neighborhoods or real estate market. *Id.* at 38:23–39:12, 40:7–8, 40:15–41:20, 68:6–9, 51:17–52:11, 67:17–68:9, 82:16–18, 83:1, 110:4–25;
- Zabel has proposed no way for his hypothetical model to account for properties' varying characteristics, such as state of upkeep, recent remodeling, etc. *Id.* at 136:21–138:19;
- Zabel does not have any specific facts or information about the alleged contamination in Carteret or how it might affect the local housing market. *Id.* at 99:4–11;

- Zabel assumes that each property in the PCA suffered a compensable injury. *Id.* at 42:10–20, 84:25–85:11. But many properties have not been tested at all. Ex. Y at ¶57. And not all of the properties that have been tested show abnormal levels of the alleged contaminants. *Id.* at ¶58.

In sum, Zabel has not performed any significant case-specific data collection or analysis, model design or development, or any other testable application or analysis.

Federal courts require case-specific model development and proof of reliability in the class certification context for statistical analyses like Plaintiffs' proposed mass appraisal and regression analyses, and these courts have routinely rejected vague and generic proposals.[48] In *ConAgra*, plaintiffs argued that their expert's report at the class certification stage satisfied evidentiary standards "by offering a basic description of the manner in which hedonic regression and conjoint analysis operate," and they "assert[ed] that the exact specifications [the expert] will use will be solidified as discovery progresses." *Id.* at 552. The court rejected these arguments, finding:

> [The expert] does not provide a damages model that lacks certain variables or functionality. Rather, he provides no damages model at all. Although the methodologies he describes may very well be capable of calculating damages in this action, [the expert] has made no showing that this is the case. He does not identify any variables he intends to build into the models, nor does he identify any data presently in his possession to which the models can be applied. The court is thus left with only [the expert's] assurance that he can build a model to calculate damages. Stated differently, his declaration is "so incomplete as to be inadmissible as irrelevant."

*Id.* (internal citation omitted). The court in *Morr v. Plains All American Pipeline,* 2021 WL 4478660 (S.D. Ill. Sept. 30, 2021), recently rejected similar conclusory property damage opinions finding that the expert's "failure to complete even a limited demonstration of his model's application to the facts of this case deprives the Court of the opportunity to assess his model's

[48] *See, e.g., In re ConAgra Foods, Inc.*, 302 F.R.D. 537 (C.D. Cal. 2014).

reliability based on accepted quantitative metrics." *Id.*, at *6.[49] *ConAgra*'s and *Morr*'s description of the lack of case-specific model development and analysis perfectly describes Zabel's report and lack of case-specific work here. Like *ConAgra* and *Morr,* Zabel "provides no damages model at all," and has "deprive[d] the Court [and Defendants] of the opportunity to assess his model's reliability based on accepted quantitative metrics." *ConAgra,* 302 F.R.D. at 552; *Morr*, 2021 WL 4478660, at *6. Without some demonstration of reliability of his model applying case-specific facts, Zabel's opinion is so incomplete as to be inadmissible and irrelevant.

**2. Zabel has not demonstrated that a reliable model can be constructed to account for the wide diversity of properties in the PCA.**

Plaintiffs must demonstrate that there is admissible, class-wide evidence of property damage. Yet the characteristics and conditions of the properties within the PCA are diverse: there are distinct neighborhoods and types of properties (Ex. Y at ¶27); most properties have not been tested for contamination (*Id.* ¶57); and not all properties that were tested meet remediation requirements. *Id.* ¶58. In situations like this, the Third Circuit has made clear that plaintiffs must have individualized proof of damages rather than relying on an expert's stated generalities.[50]

As in *Gates*, Zabel concedes that his proposed model would not be "conclusive as to individual cases."[51] During his deposition, Zabel acknowledged that the hedonic model does *not*

[49] Other district courts have reached similar conclusions. *See, e.g., Henry v. St. Croix Alumina, LLC*, No. 99-cv-0036, 2008 WL 2329223, at *7 (D.V.I. June 3, 2008); *Pedroza v. PetsMart, Inc.*, No. ED CV 11-298-GHK, 2013 WL 1490667, at *3 (C.D. Cal. Jan. 28, 2013); *Fosmire v. Progressive Max Ins. Co.*, 277 F.R.D. 625, 630-31 (W.D. Wash. 2011); *Somers v. Apple, Inc.*, 258 F.R.D. 354, 361 (N.D. Cal. 2009).

[50] *See Gates v. Rohm & Haas, Co.*, 655 F.3d 255, 266 (3d Cir. 2011). "Averages or community-wide estimations would not be probative of any individual's claim because any one class member['s property] may have an exposure level well above or below the average." *Id*. Further, "[n]ot all claims of property damage based on exposure are alike. Single instances or simple theories of contamination may be more apt for consolidated proceedings than extensive periods of contamination with multiple sources and various pathways." *Id.* at 271.

[51] *Id.* at 261.

make a determination about any specific property's value or individualized damages with respect to environmental contamination. Ex. C at 168:1–8. Rather, for his hypothetical model, Zabel asserts without significant case-specific work that the PCA is "homogenous," (*Id.* at 38:23–39:12, 40:7–41:20, 68:6–9) and that he can calculate damages without needing to know how many properties have been tested for contamination, the individual properties' test results, the type of contamination, or whether specific properties needed excavation and removal. *Id.* at 55:10–13, 55:21–56:2. This is because, per Zabel, "hedonic models are used to give information on general market outcomes, not specific houses." *Id.* at 84:25–85:11. But, the Third Circuit requires proof of damages for "specific houses," and Zabel's proposed methodology fails that requirement.[52]

**3. Zabel has not demonstrated that a reliable model can be constructed that takes into account known alternate sources of contamination.**

The U.S. Supreme Court has held that a class-wide damages model must be able to isolate damages resulting from the plaintiffs' proposed theory of class-wide liability.[53] But Zabel has made no effort to demonstrate how his hypothetical model will isolate damages allegedly caused by Defendants from a multitude of alternative sources of contamination. Nor could he. Zabel has stated that he has "not received any specific information on the levels of contamination in any of the properties in Carteret" (Ex. C at 136:18–20); and was not aware of any potential alternative sources of contamination. *Id.* at 282:9–19. Zabel speculated he could address alternate sources. *Id.* at 132:2–136:20. But there is no model for anyone to test, and Zabel is just speculating about future performance of an as-yet unbuilt model. "[S]uch guess work is not a reliable method."[54]

[52] *See also, Cotromano v. United Techs. Corp.*, No. 10-80840-CIV, 2018 WL 2047468, at *19 (S.D. Fla. May 2, 2018) (finding "mass appraisal" method was unreliable and did not "fit under the facts" of the case in part because "[t]he affected community is not remarkably homogeneous").
[53] *Comcast Corp. v. Behrend*, 569 U.S. 27, 35–38 (2013).
[54] *Player v. Motiva Enter., LLC*, 240 F. App'x 513, 520 (3d Cir. 2007).

**4. Zabel is not qualified to act as an expert appraising property values.**

An expert must possess sufficient qualifications in the form of knowledge, skills and training. A federal court found a proposed expert lacked the qualifications to testify to the diminution in property value due to contamination where he had worked as a licensed appraiser for 22 years but never appraised contaminated property.[55] Zabel is not even a qualified or licensed real estate appraiser. Ex. C at 80:3–5. He has not reviewed the relevant real estate appraisal standards for measuring the effects of environmental contamination. *Id.* at 80:11–81:7. He did not and has no plans to consult with a local real estate expert or appraiser. *Id.* at 23:24–24:10, 80:11–22. Zabel lacks the requisite knowledge or expertise to issue an opinion on real property appraisal.

Zabel's opinions about a hypothetical damages model are inadmissible in this matter.

**E. Paul Rosenfeld is not qualified to opine regarding NJDEP regulations and cleanup standards.**

Rosenfeld opines that the current 400 ppm cleanup standard for lead is not appropriate because "regulatory agencies are moving toward more protective cleanup standards for remediation of lead in residential soil." Ex. O at 20. He theorizes that 200 ppm will be the future number. Ex. D at 127:7–9, 127:17–23. It has been over three years since Rosenfeld's prediction, but NJDEP has not changed the lead cleanup standard. Rosenfeld is not an expert in guessing the future regulatory behavior of government agencies and his guesses about the future are not admissible evidence.

Rosenfeld conceded that establishing cleanup standards is "typically the regulator's job." Ex. D at 32:16–33:5. Rosenfeld testified that he himself had "*never* done one of those risk assessments where a regulatory agency has approved the level that [he] came up with as part of

[55] *See Player v. Motiva Enter. LLC*, 2006 WL 166452, at *6 (D.N.J. Jan. 20, 2006), *aff'd*, 240 F. App'x. 513 (3d Cir. 2007).

that risk assessment"—the result he argues for here. *Id.* at 35:20–37:10 (emphasis added). Rosenfeld is not a toxicologist. *Id.* at 37:19–21. He further acknowledged that he is neither a regulator nor an expert in New Jersey environmental regulations (*Id.* at 38:4–11), and candidly acknowledged that NJDEP "has not adopted [the lower standard] for the entire state in their remediation guidance." *Id.* at 161:21–23. Rosenfeld is a soil scientist with no qualifications to render an opinion on the appropriate lead cleanup level in New Jersey.

Other than Rosenfeld's unqualified speculation, there is little else to support his opinions. Rosenfeld observes that at a single Superfund site in New Jersey, the State concurred with a 200 ppm lead cleanup standard several years ago. But Rosenfeld acknowledges that the 400 ppm standard remains to this day, even after an update and reissuance of residential soil cleanup levels by the State. *Id.* at 140:25–141:15. Rosenfeld agrees that both NJDEP and the U.S. EPA continue to endorse the 400 ppm cleanup level that is used by USMR in the AOC in Carteret. *Id.* at 141:12–144:1. Rosenfeld erroneously claimed that the LSRP in this matter, Mr. McNally, suggested that the "lower cleanup level [proposed by Rosenfield] was appropriate," a point Rosenfeld concedes was entirely unsupported by any testimony or report from Mr. McNally. *See id.* at 156:25–158:1. McNally suggested no such thing. Rosenfeld's opinions here are unreliable.

## V. CONCLUSION

Defendants request that testimony and opinions of George Flowers, Paul Rosenfeld, Joel Blum, Jeffery Zabel, David Sullivan, and Anthony Havics be excluded as set out above.

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Respectfully submitted

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